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PROMOTION OF INTEGRATED SERICULTURE AND OTHER ALLIED ACTIVITIES FOR IMPROVING LIVELIHOODS OF MAHILA KISAN IN MANDI DISTRICT, HIMACHAL PRADESH

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BAIF Development Research Foundation Pune, a non-governmental organization involved in development research and implementation of research based and result based development programmes. Based on its earlier experience and learning, realized that, sericulture intervention blend with integrated approach brings an excellent outcome and create visible impact in the rural area. It was experienced that active participation and involvement of concerned farming community in various stages of development from planning stage leads to sustainable and replicable development model. Promotion of sustainable livelihood programme for weaker section with conservation& judicious utilization of natural resources offers a huge challenge. Over a period of 25 years, BAIF has taken up several activities related to different aspects of sericulture through number of projects in the field of research, extension, training, technology development and demonstrations, field testing and adoption of technologies to meet farmers' requirement.

With support of District Rural Development Agency (DRDA) and District Industrial Center (DIC)Mandi, an innovative integrated sericulture based cropping system incorporated with region and season specific allied activity was designed and implemented by BAIF Development Research Foundation, Pune. The interventions under the project were well accepted and adopted by mahila participants, which resulted as replicable model in Mandi of Himachal Pradesh.

BAIF intervention in promotion of sustainable livelihoods through sericulture with allied activities from 2003 to 2011 focused at strengthening rural resource poor families through appropriate technology interventions viz., training, capacity building, demonstration, exposures, formation of activity groups, scientific rearing of silkworms, plantation utilization and management, post cocoon processes, value addition, natural resource management, organic farming and marketing linkage. This has enabled to make sericulture based rural enterprise come within the reach of poor in order to stop distress migration, rejuvenating their degraded natural resources and offering them a way out of their poverty and bring prosperity.

It was evident that, integrated approach plays a pivotal role in sustainable development of the family as a whole and women members in particular by adding value to the livelihood programme. Such activities always keep the community engaged and involve in their farming activity which result in attractive remuneration and enormous employment opportunity around the year which ultimately lead to improved quality of life.

The geographical spread of the project was in 5 blocks namely Balah, Sundar nagar, Gohar Gopalapur and Chauntra. These blocks have been lagging behind in various development fronts especially in the farm sector, which forms the livelihood for majority of the population.

Problem Analysis and opportunity: The identified locations were exclusively dependent on rainfall and most of the farming community depends on traditional crops like wheat and maize. These locations are favorable for silkworm rearing and allied activities like mushroom cultivation and organic farming. The area also falls under hilly and undulating terrain, lacks the basic amenities like transportation, and employment is very limited. The farming communities particularly women and youths have shown keen interest in learning new activities and supplement their agriculture income. Moreover it was documented that the location well suits for mulberry sericulture with integration of other allied activities.

BAIF initiated sericulture promotion activity in Mandi district of Himachal Pradesh keeping in mind the earlier experiences and to demonstrate integrated farming approach. With this view, BAIF has undertaken two govt. sericulture farms in Himachal Pradesh. Several farm demonstrations in pre and post cocoon technology were taken up to educate and convince local farming communities. The rainfed sericulture practices were adopted in the project with focus on women participation in all the stages of implementation. The activity carried out in the farms helped to motivate, training and capacity building processes.

Dadoh farm: Dadoh mulberry sericulture farmis located in Balh Block and situated in the plain land having about 4 acres of land. 1.5 acre area was covered with mulberry tree type plantation with different varieties viz., M-5, local and S-146. The part of the farm was used for raising saplings with varied spacing. At present, the whole farm is covered under mulberry plantation. At Dadoh farm, three different types of economic models were developed, tree types mulberry plantation under rain-fed condition, tree type with irrigated (drip) system and bush type plantation with different varieties of mulberry (S-1635 & S-36) and spacing 4 x 2 x 1ft. & 5 x 2 x 3ft.

Hattan Farm-cum-Technical Service Station: Hattan T.S.S. is falls under Chauntra Block and Ladbhadol tehsil and 95 km far from Mandi. Hattan farm is under rain-fed condition and farmers are depended on traditional agriculture crop like maize and wheat and no such cash crop grown in this region. It was documented that most of the village youths used to migrate to other states/ cities for the search of job and livelihoods.

In Hattan farm, tree type plantation of mulberry has been retained and is being groomed and maintained to demonstrate as rain-fed model. Since the farm falls under hilly area and much focus is made to improve the productivity of farm by incorporating best management practices with existing local plantations. The farmers who are adjacent to this farm were supplied with improved varieties of mulberry i.e., S-146 and S-36

Field extension and Mulberry promotion activity:
Daddoh Centre: During 2011-12, total 7200 dfls were brushed and rearing was carried out by 105 participants. The cocoons produced out of 7200 dfls was 2730.2 kg worth of Rs 382,064/-, the average rate received by participants was Rs.140/kg of green cocoon and an average cocoon production by the participant was 40kg/100 dfls and income generated of Rs. 4000/-per participant during the spring and summer seasons

Hattan Technical Service Station: BAIF organized awareness camps in ten Gram Panchyat viz., Daler, Kathoun, Tulah, Ladbhadol, Simas, Otpurlangna and thirteen villages like Balhra, Kothi, Mathathana, Ghuras, Hattan, Panjalag,. Bhraw, Gagal Simas, ladbhadol, Sambalkhora and Tulah khaddar in order to motivate farmers to take up innovative integrated Sericulture programme, mushroom cultivation and organic farming. The women participants were also taken on exposure to BAIF Central Research Station, Urulikanchan, Pune and demonstrated soil to silk concept and pre and post cocoon technologies.

The project participants have planted 2.60 lakhs of mulberry saplings in 115 acers of area in 5 blocks of Mandi district under rainfed condition. Presently farmers carry out silkworm rearing activity by utilizing 1.15 lakh productive plants.Apart from project support, about 20000 mulberry saplings of S1635 verity were planted on the farm bunds, available spaces of participant dwelling houses in Gopalpur, Sundar nagar, Balh and Chountada block of Mandi district under MGNREGS programme.

Training and capacity building: Since training and capacity building plays a pivotal role in strengthening and up-grading participant's knowledge level and enhances special skills in order to manage the project activities in a professional way, about 250 participants were trained among them 230 participants were undergone in-depth training in mulberry plantation and Silkworm rearing practices while 20 percipients were trained on post cocoon technology like reeling, twisting at Govt. Sericulture Farm, Dadoh. It was recorded that, among 20 women participants who were trained in post cocoon technology, 10 women beneficiaries are continuously engaged in reeling activity.

More than 300 farmers were sensitized in the process of cultivation of button mushroom & management by mushroom expert. 200 farmers were sensitized and exposed to negative effect of use of chemical pesticides on health as well on environment and importance of "Organic farming". This programme was conducted in Diyargi, Dabhan and Salwanmbhi Bhyarta Panchayats under Balh

block. The farmers were given demonstration of vermi-composting and earthworms were supplied to take up vermicomposting activity by themselves. At the same time, fodder and wheat harvesting by using simple harvester machines was also demonstrated.

The regular meeting of all the 15 SHG's were systematically conducted and motivation on group dynamics, savings, fund utilization, innovative approaches, sharing and caring etc was part of meeting. Group was also motivated to have cooperative federation/association to look after the assets created under the project and also involve them in management of post cocoon and outlet activities in order to sustain programme beyond the project period.

Integration of sericulture with other allied activities:
Mushroom cultivation: About 300 families were exposed and motivated to take up mushroom cultivation. Among them,80 participants were identified and provided mushroom stags and input material to conduct mushroom cultivation. The cultivation was carried out in the existing silkworm rearing shed. It was recorded that the average income generated from mushroom cultivation by the farmers was of Rs 5000/- to Rs.7000/-.The waste stages after harvest of mushroom were reused by beneficiaries to grow vegetables like lady finger, chilly, coriander, brinjal etc., which were used for their home consumption.

Vermi-composting: The training and exposure was provided to women members of the participating family to use farm waste and sericulture waste to convert it into vermicomposting. The compost produced was used for their own land to improve land productivity and few participants sold it through DRDA sponsored Red Cross Society Mela.

Direct 'incremental' income (returns) to farmers through different interventions

No. of rearing	DFL brushed per year	Cocoon production	Mushroom	Vermi-compost	Vegetables	Total Income (Rs.)
First	*150-200 DFL	(70-100 kg) Rs.14000/- to 20000/-	(50 kg) Rs. 6500/- to 7500 /-	(60-80 kg) Rs.300 /- to 400/-	Rs.1000/- to 1500/-	Rs.218 00 /- to 29400/-
Second						
Third						

- Average cocoon rate - Rs 200/- per kg green cocoon
- Average cocoon production 45 to 50kg per 100 dfl

Impact of BAIF intervention in promotion of mulberry sericulture in Himachal Pradesh:

- BAIF made consistent efforts to motivate farming community to take up sericulture as a part of integrated model with other allied activity and promoted more than 300 families
- 3 decentralized Chawki centers were initiated, while few participants reared silkworms from eggs stage to spinning.
- More than 40% of the participating families were able to carry out 3 crops of silkworm rearing along with two intercrops.
- The average productivity through sericulture during the spring season was more than 40kg -45kg / 100 dfls.
- Success of this led to encourage many more sericulture rearing families coming forward to undertake the sericulture activity. However BAIF planned to institutionalize such undertaking through the SHG's / federation. This will help people participation and accountability towards sustenance of sericulture programme.

FARMERS EXPOSURE TO PRE AND POST COCOON SERICULTURE ACTIVITIES

Mulberry plantation in pair & row system

Women farmers in mulberry plantation

Mulberry silkworm rearing on rearing beds

Cocoon harvesting & grading

Processing of Silk yarn by women participants

Use of waste mushroom stags for Vegetables cultivation

MUSHROOM CULTIVIVATION ACTIVITY FOR LIVELIHOODS

Mushroom stags transportation by women participants

Mushroom growing in polythene bags

VISIT OF DIGNITARIES FROM DRDA & DIC TO SERICULTURE ACTIVITIES